

## PATENT COOPERATION TREATY

PCT

05 MAY 2005

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

|                                       |   |   |
|---------------------------------------|---|---|
| Applicant's or agent's file reference | <b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below. |   |
| International application No.         | International filing date (day/month/year)  | (Earliest) Priority Date (day/month/year) |
| PCT/UA 02/00062                       | 08/11/2002  |   |
| Applicant                             |   |   |
| VLADIMIROV, Oleksandr V.              |   |   |

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

## 1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (see Box II).

## 4. With regard to the title,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

INTRODUCING MERCURY INTO A DISCHARGE LAMP

## 5. With regard to the abstract,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

## 6. The figure of the drawings to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☒ because this figure better characterizes the invention.

3  
☐ None of the figures.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/UA 02/00062

## Box III TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)

The invention relates to methods of manufacturing gas-discharge electron lamps, and neon tubes in particular. According to the invention, it is proposed, prior to carrying out vacuum treatment of the internal space of an electron lamp (1), to mount at least one glass capsule (2) combined in an open metal combiner (4) in an exhaust tube (5), in close proximity to an exposed electrode in such manner that the opening provided in metal container (4) is facing the working area of the lamp (1). Upon carrying out vacuum treatment and filling the internal space with an inert gas, the portion of exhaust tube (5) that contains the capsule (2) disposed within the metal container (4) is separated from the evacuation unit (10), and this area is subjected to the local effect of a high-power electromagnetic radiation, thereby causing substantially instantaneous heating of the metal container (4), which results in a rupture of the glass capsule (2) and intense evaporation of the liquid mercury (3) combined therein, thereby resulting in a directional flow of pure mercury vapour, which flow rapidly fills up said internal space of the tube through the opening provided in the metal container (4). Such method permits to provide environmentally safe production and to eliminate contamination of mercury inside the working space of a lamp, which in turn allows carrying out precise dosing and introduction of calculated minimal amounts of mercury. In addition, the inventive method does not require application of special electrodes and might be used in any mass manufacture of commercial products, and neon tubes in particular.

International Application No

PCT/UA 02/00062

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 H01J9/395

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|------------|---|-----------------------|
| A          | US 2 499 197 A (POSEY WILLIAM T)<br>28 February 1950 (1950-02-28)<br>column 2, line 2 - line 26; figures<br>---   | 1,5                   |
| A          | US 4 335 326 A (LATASSA FRANK M ET AL)<br>15 June 1982 (1982-06-15)<br>cited in the application<br>abstract; figures<br>column 2, line 15 - line 20<br>---  | 1,5                   |
| A          | DATABASE WPI<br>Section Ch, Week 197544<br>Derwent Publications Ltd., London, GB;<br>Class L03, AN 1975-73414W<br>XP002278505<br>& JP 50 030945 B (HITACHI LTD),<br>6 October 1975 (1975-10-06)<br>abstract<br>---<br>-/- | 1,5                   |

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*Z\* document member of the same patent family

Date of the actual completion of the international search

29 April 2004

Date of mailing of the international search report

17/05/2004

Name and mailing address of the ISA

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| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT |  |                       |
|--|--|-----------------------|
| Category *   | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No. |
| A  | <p>PATENT ABSTRACTS OF JAPAN<br/>vol. 003, no. 140 (M-081),<br/>20 November 1979 (1979-11-20)<br/>- &amp; JP 54 118674 A (TOSHIBA CORP),<br/>14 September 1979 (1979-09-14)<br/>abstract; figure</p> | 1,5                   |

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/UA 02/00062

| Patent document<br>cited in search report |   | Publication<br>date | Patent family<br>member(s) | Publication<br>date |
|---|---|---------------------|----------------------------|---------------------|
| US 2499197                                | A | 28-02-1950          | NONE                       |                     |
| US 4335326                                | A | 15-06-1982          | JP 56158056 U              | 25-11-1981          |
| JP 50030945                               | B | 06-10-1975          | NONE                       |                     |
| JP 54118674                               | A | 14-09-1979          | NONE                       |                     |